



## Business Study

# Expertise Automation at Eastman Chemical

### About Eastman

Eastman Chemical Company (NYSE:EMN) is a global company headquartered in Kingsport, Tennessee, U.S.A. Eastman is the world's largest supplier of polyester plastics for packaging; a leading supplier of coatings raw materials, specialty chemicals and plastics; and a major supplier of cellulose acetate fibers and basic chemicals. Eastman is one of the top 10 global suppliers of custom-manufactured fine chemicals for pharmaceuticals, agricultural chemicals and other markets.

Continual process improvement has always been an Eastman Chemical core competency. The company has a history of incremental and breakthrough manufacturing process improvements.

Eastman is considered an industry leader when it comes to applying IT technologies to solve chemical industry problems. As a part of this effort, Eastman's Emerging Digital Technologies group investigates hundreds of new technologies every year.

- A key requirement was that any system would be owned by the experts themselves - not IT departments nor consultants. The employees with the knowledge should be the ones to develop and maintain the solutions.

### The Need

Eastman contacted Intellix in relation to investigate tools to help in the areas of decision support and knowledge management. They had been using simple decision-tree based systems for years but they were looking for systems meeting the following requirements:

- Making it easy to store and automate expertise from key employees, especially those due for retirement.
- A flexible system, robust enough for many different situations. Eastman had experience with process modeling and simulation tools but found them too rigid or complicated for most situations.
- Opportunities to improve efficiency existed with the large number of infrequently run processes. Eastman wanted a tool that still showed a good ROI in such situations.

### The Solution

After scanning the market for technologies, Eastman selected Intellix' products as 'best in class' and started a comprehensive evaluation.

A small group within Eastman received 3 days training and then set out to develop 4 very different pilot solutions:

- A Coal Gasification process optimization solution was developed that fully integrated to Eastman's real-time process information management system. The solution diagnosed overall process stage efficiencies and indicated the location of bottlenecks. Operators were then able to 'drill-down' and identify the problem areas in detail.
- A solution addressing a specific batch process where infrequent operation made it difficult to improve efficiency. A solution was developed that allowed expertise for that process to be recorded and shared. Eastman developed a system that became the virtual process 'bible' - it contained information from set-up details through to troubleshooting wizards.

## Expertise Automation at Eastman Chemical



### Intellix Product Offering

The Intellix products are centered around 4 cornerstones of expertise automation: Capture, share, consume, and manage. The software products enable enterprises to capture and share expertise as a first step by use of The Intellix Designer, which is used to enter and refine expertise contents. It is an integrated development environment with built in test facilities, that can be used without any programming skills.

As a second step the Intellix Knowledge Server is used to deploy the developed expertise contents to be consumed throughout the enterprise. Consumption modes include intranets and extranets as well as other interactive media like e.g. messenger services.

- A 'smart' operating and troubleshooting manual for the operation of a highly complex robot used in chemical research and development. An Intellix solution became the focus for recording all knowledge about the operation of the robot. The solution served as both an interactive user-manual and a troubleshooter for finding and resolving problems.
- A proof-of-concept B2C Wizard for the troubleshooting of injection molding problems. Completed in a single day, the solution was an expert system version of a procedure manual.

The solutions were completed over a four month period and required 1-3 man-weeks each to complete. Three of the pilots were immediately placed into production.

### The Benefits

Six months on, adoption levels for the solutions continue to be high. Advice is available 24/7, and the solutions are being continually enriched based on user feedback. Eastman's experts remain enthusiastic because the solutions lessen their 'pain'.

Many questions they used to receive personally are now handled directly by their solution. This provides additional motivation to continually maintain solutions and frees up the expert's time for more productive work.

Eastman's ROI calculations have shown excellent returns from the projects. Even when considering batch processes where savings may be less than \$50k

per year, low development costs (1-3 man weeks per solution) deliver a compelling ROI.

### The Future

Eastman purchased an enterprise license for Intellix products and since then has rapidly expanded development of expertise automation solutions throughout the company. Most solutions are developed by the experts themselves in 40-60 hours, with little or no IT involvement.

Today, the use of Intellix technology for expertise automation has spread to 3 different divisions of Eastman and many new solutions have been completed during 2002-2010.

### About Intellix

Intellix is a Danish software company that supplies knowledge solutions for the automation of expertise. Intellix' solutions are based on standard products that are easily integrated with existing company systems and databases. Intellix is based in Copenhagen, Denmark.

